

CLAIMS

1. Foamable compositions mainly formed by:
 - A) 50-99.9% by weight of a chlorotrifluoroethylene (CTFE) polymer containing at least 80% by moles of CTFE; and
 - B) 0.1-50% by weight of a nucleating agent.
2. Foamable compositions according to claim 1 mainly formed by:
 - A) 50-99.9% by weight of a chlorotrifluoroethylene (CTFE) polymer containing at least 80% by moles of CTFE; and
 - B) 0.1-50% by weight of a nucleating agent, under fine powder, having average particle size lower than 50 micron, preferably lower than 20 micron and a melting temperature higher than 250°C.
3. Compositions according to claims 1-2, wherein the nucleating agent is selected between the tetrafluoroethylene (TFE) homopolymer or its copolymers having a second melting temperature higher than 250°C.
4. Compositions according to claims 1-3, wherein the nucleating agent B) is the tetrafluoroethylene homopolymer (PTFE) having a number average molecular weight lower than 1,000,000, preferably lower than 500,000.
5. Compositions according to claims 1-4, wherein the TFE

copolymers are selected from TFE copolymers with perfluoroalkylvinylethers wherein the alkyl is a C_1 - C_3 , TFE copolymers with perfluorodioxoles or TFE copolymers with hexafluoropropene (FEP), optionally containing perfluoroalkylvinylethers.

6. Compositions according to claims 1-5, wherein the nucleating agent is used in an amount from 5 to 30% by weight, more preferably from 10 to 20%.
7. Compositions according to claims 1-6, wherein the nucleating agent B) is the tetrafluoroethylene homopolymer (PTFE), irradiated with gamma rays or with electron beam.
8. Compositions according to claims 1-7, wherein the polymer A) is formed by at least 90% by moles of CTFE, preferably by at least 95% by moles.
9. Compositions according to claims 1-8, wherein the polymer A) is a CTFE copolymer with one or more comonomers selected from:

- perfluoroalkylvinylethers, wherein the alkyl is C_1 - C_3 , preferably perfluoropropylvinylether;
- dioxoles having formula:



wherein Y is equal to OR_f wherein R_f is a perfluoroalkyl having from 1 to 5 carbon atoms, or $\text{Y} = \text{Z}$ as

defined below; preferably Y is equal to OR_f ; X_1 and X_2 , equal to or different from each other, are -F or $-CF_3$; Z is selected from -F, -H, -Cl; preferably in formula (I) X_1 , X_2 and Z are -F; R_f is preferably $-CF_3$, $-C_2F_5$, or $-C_3F_7$;

- acrylic monomers having general formula:



wherein R_1 is a hydrogenated radical from 1 to 20 C atoms, C_1 - C_{20} , alkyl, linear and/or branched, or cycloalkyl radical, or R_1 is H. The radical R_1 can optionally contain: heteroatoms preferably Cl, O, N; one or more functional groups preferably selected from -OH, -COOH, epoxide, ester and ether; and double bonds;

- vinylidene fluoride (VDF) and/or tetrafluoroethylene (TFE).

10. A process to prepare molded articles and foamed coatings comprising the extrusion or thermoforming of the compositions of claims 1-9.
11. Molded articles and foamed coatings obtainable according to claim 10.
12. Articles and foamed coatings according to claim 11 having a void % higher than 10% by volume, preferably higher than 20% by volume, wherein the average cell sizes are

- lower than 100 micron, preferably lower than 60 micron.
13. Electric wires formed of a metal conductor and of a foamed coating according to claim 12.